

CLAIMS

1. A device (1, 101) for protecting an electrical power distribution network against the overvoltages due, in particular, to a lightning strike, this protective device comprising a first electrode (3) electrically connected to the network to be protected, a second electrode (4) connected to a grounding conductor, and focusing means (5) capable of guiding an electric arc generated between the two electrodes toward a fractionation device (6), said device comprising a casing (2, 102) which accommodates the two electrodes, the focusing means and the fractionation device, this casing being in communication with the outside through at least one discharge channel (7, 107) designed so as to substantially lower the temperature of the gases generated by the formation of the electric arc, characterized in that said at least one discharge channel (7) has at least one change of section.

2. The device as claimed in claim 1, characterized in that said at least one channel (7, 107) extends substantially in the same plane as the fractionation device (6).

3. The protective device (1, 101) as claimed in claim 1 or 2, characterized in that said at least one discharge channel (7) has at least one chicane (20, 120).

4. The protective device (1, 101) as claimed in claim 3, characterized in that said at least one chicane (20, 120) forms an angle of between 45° and 180° .

5. The protective device (1, 101) as claimed in any one of claims 1 to 4, characterized in that the fractionation device (6) is arranged between the focusing means (5) and the inlet of the discharge channel (7).

6. The protective device (1, 101) as claimed in any one of claims 1 to 5, characterized in that the fractionation device (6) is formed with the aid of a set of parallel metal plates (14).

7. The protective device (1) as claimed in claim 5, characterized in that the metal plates (14) are kept at a distance from one another with the aid of two blades (15) having orifices engaged in lateral lugs (16) located on each of the metal plates.

8. The protective device (1) as claimed in any one of claims 1 to 7, characterized in that the focusing means (5) define an arc guiding space substantially having an overall shape which diverges in the direction of the fractionation device.

9. The device as claimed in the preceding claim, characterized in that the discharge channel (107) comprises at least a first and second section (119, 123) which are substantially parallel and have substantially equal or at least similar lengths, said sections being in communication through a cavity (121).

10. The protective device (1, 101) as claimed in claim 9, characterized in that the discharge channel (107) extends laterally relative to the fractionation device.

11. A device (1, 101) for protecting an electrical power distribution network against the overvoltages due, in particular, to a lightning strike, this protective device comprising a first electrode (3) electrically connected to the network to be protected, a second electrode (4) connected to a grounding conductor, and focusing means (5) capable of guiding an electric arc generated between the two electrodes toward a fractionation device (6), said device comprising a casing (2, 102) which accommodates the two electrodes, the focusing means and the fractionation device, characterized in that said casing is in communication with the outside through two discharge channels which are substantially arranged symmetrically relative to the fractionation device, on either side of it, said channels extending substantially in the same plane as the fractionation device.